State of California AIR RESOURCES BOARD

EXECUTIVE ORDER A-232-16

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

RENAULT VEHICULES INDUSTRIELS

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Renault Vehicules Industriels 1992 model diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

| <u>Fuel Type</u> : Dies | el | | Fub.ust Smission Coutus |
|-------------------------|--------|----------------|--|
| Engine Family | Liters | (Cubic Inches) | Exhaust Emission Control Systems and Special Features |
| NRE0377FAC0 | 6.2 | (377) | Charge Air Cooler Turbocharger |
| NRE0335FAA3 | 5.5 | (335) | Charge Air Cooler Turbocharger |
| NRE0377FABX | 6.2 | (377) | Charge Air Cooler Turbocharger |

Engine models and codes are listed on attachments.

The following are the certification emission standards for these engine families in grams per brake-horsepower-hour:

| Hydrocarbons | Carbon <u>Monoxide</u> | Nitrogen <u>Oxides</u> | <u>Particulates</u> |
|--------------|---------------------------|---------------------------|---------------------|
| 1.3 | 15.5 | 5.0 | 0.25 |

The following are the certification emission values for these engine families in grams per brake-horsepower-hour:

| Engine <u>Family</u> | Hydrocarbons | Carbon <u>Monoxide</u> | Nitrogen <u>Oxides</u> | <u>Particulates</u> |
|-------------------------|--------------|---------------------------|---------------------------|---------------------|
| NRE0377FAC0 | 0.2 | 2.1 | 4.5 | 0.19 |
| NRE0335FAA3 | 0.4 | 1.8 | 4.7 | 0.15 |
| NRE0377FABX | 0.2 | 1.6 | 4.6 | 0.18 |

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Health and Safety Code Section 43205.5).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 10

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R. B. Summerfield
Assistant Division Chief
Mobile Source Division

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199 2 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET HEAVY-DUTY DIESEL ENGINES

| Manufacturer RENAULT VEHICULES INDUSTRIELS Engine Family NRE0377FACO Liters (CIO) 6 174 (377) Fuel Type DIESEL Engine Config. I - 6 Exhaust ECS & Special Features (TC) CAC (Use abbreviations per SAE J1930 Jun88) | | | | | | | |
|--|------------------------------|------------------------------|---------------------|--|---|--|--|
| Engine Model (Eng. Code) | | Injector Mfr. P/N | Rated HP @ RPM | Fuel Rate @ Rated HP cc/stroke | l Part. Trap/ I Catalyst I Mfr. P/N | | |
| MIDR 060226M/2 | R.BOSCH Gmbh 5000 691 500 | R.BOSCH Gmbn 5000 691 504 | 215 235 0 | 99 (75.9) | | | |

| · Issue Date : Déc. | 91 Submi | tted by Rena | ult Vehicule | s industriels | Pg·16.12.02 |
|---------------------|----------|--------------|--------------|---------------|-------------|
| Revision Date : | - | | | | B |

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199_2 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET HEAVY-DUTY DIESEL ENGINES

| Manufacturer RENAULT VEHICULES INDUSTRIELS Engine Family NREO3_5FAA3 Liters (CID) | | | | | | |
|--|-------------------------|------------------------|-------------------|--|--|--|
| Engine Model (Eng. Code) | Fuel Pump Mfr. P/N | Injector Mfr. P/N | Rated HP @ RPM | Fuel Rate Part. Trap/ @ Rated HP Catalyst cc/stroke Mfr. P/N | | |
| MIDR | R. BOSCH Gmbh | R.BOSCH Gmbh | 180 | 87 | | |
| 060226L | 5000 684 386 | 5000 684 556 | 2500 | (71.0) | | |
| MIDR | | | | | | |
| 060226M | 5000 684 444 | 5000 684 559 | 210 | 100 | | |
| | | | 2350 | (76.2) | | |

| Issue Date : Nov. | 90 Submitted by Renault Vehicules industriels Pg · 16.12.00 |
|-------------------|---|
| Revision Date : | Déc. 91 |
| 1290 | |

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199_2 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET HEAVY-DUTY DIESEL ENGINES

| Manufacturer | RENAULT VEHIC | ULES INDUSTRIE | s Engine | Family NRE037 | 7FARX |
|---------------------------------|------------------------------------|------------------------|-------------------|--|-------------------------------------|
| Liters (CID) _ | 6.174 (377 | _) Fuel Type_ | DIESE! | Engine Config | . <u>T - 5</u> |
| Exhaust ECS & (Use abbreviat | Special Feature lions per SAE J | (TC) (930 Jun88) | <u>Cr</u> | た | |
| Engine Model (Eng. Code) | | Injector Mfr. P/N | Rated HP @ RPM | Fuel Rate @ Rated HP cc/stroke | Part. Trap/ Catalyst Mfc. P/N |
| MIDR | R.BOSCH Gmbh | R.BOSCH Gmbh | 180 | 82 | |
| 060226 1/2 | 5000 691 358 | 5000 691 362 | 2500 | (67,0) | |

| Issue Date : Déc.9 | 1 Submit | ted by Rer | hault Vehic | ules indu | striels | Pg · 16.12.01 |
|--------------------|----------|------------|-------------|-----------|---------|---------------|
| Revision Date : | | E - 🗪 + 4, | F N | • | | |
| 1290 | | | · | <u> </u> | | |